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DAIRY FARMING AND ITS IMPACT ON LIVELIHOOD AND SUSTAINABILITY OF POOR FARMER IN MURSHIDABAD DISTRICT: WEST BENGAL

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ABSTRACT

Dairy is an important sector of agriculture economy. It plays a vital role in household nutritional security, increased income and employment generation. A large segment of workforce has been employment as par time as well as fulltime in this sector of agriculture economy. They are engaged in various natures of activities like rearing, marketing, distribution and collection/processing of dairy and their product. Keeping in to consideration the study, there are significance of the dairy farming in rural economic development and sustainability of poor farmers. The district of Murshidabad has been selected as study is taking in to consideration it economic backwards, agriculture base as well as presence of large number of rural population engaged in dairy farming.

Introduction:

Dairy farming is one of the important sources of livelihood and income in rural India. As the majority of dairy farming household adopted integrated cropping and livestock farming system, they derived income from both dairy and cropping enhance the level of economic development. (N. Khan 2014).

Dairy farming is an important subsector of agriculture all over the world. Globally, it contributed 1.5 percent to GDP and it is one of the most important farming which keeps pace with overall economic expansion. In India, it played significant role through supply of milk, meet to the millions of populations and contributing 5.36percent to national GDP and 31.70 percent to agricultural GDP during 2006-2007. It is an important of Indian agriculture as well as integrating of rural economy. It is important sources of food security as it provides enrich the nutrition intake. It plays a catalytic role in modeling the socio-economic profile of rural masses through production milk. It emerged as an important growth of rural economy and considered as an optimum of rural employment and upgrading the rural health through increasing nutrition intake per head (Alii.M.2009). It emerged as important diversified farm of farming system in developing countries of especially in tropical monsoon Asian countries .(Khan. el all)

Significance of dairy farming in rural economic developmeni and livelihood generation, the present work has been undertaken following objectives:

1. The pattern and growth of dairy and their product in the study area.
2. To assess the changes in the nature of different modes employment generation through dairy farming.
3. Economic viability and sustainability of dairy farming.
4. To highlight the problem faced by dairy in the study area.

Materials and Methods:

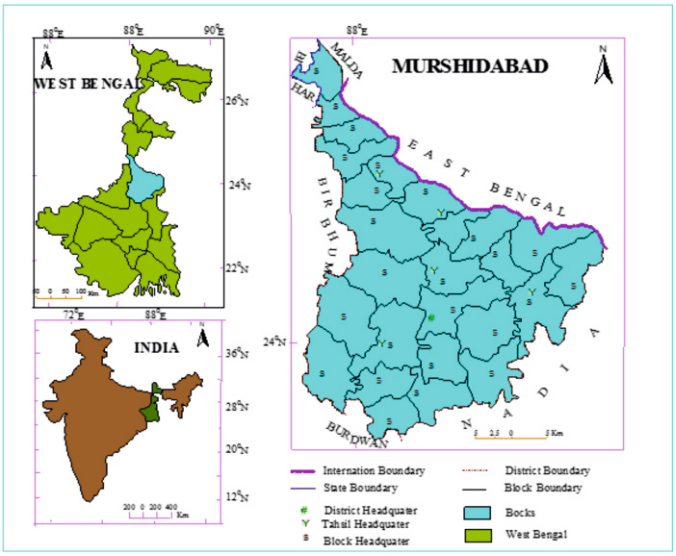
To evaluate the growth of dairy development generation for various groups of rural people in the study area (Murshidabad District) five potentials blocks was selected of the district. 150 dairy rearing household of various socio-economic conditions were interview for details enquiry regarding different issues of the study. The farmers are classified as land less, marginal, small, middle and big on the basis of size of land holding. Zero hectare, less than 1 hectare. 1-2 hectare and more than 4 hectare of land were categories for the group of fanners. Primary data were collected through field survey of sampled villages. Secondary data were collected from published record available in different national and international journals, various reports and from various offices agricultural statistical records. Collected data were processed and presented in tabular from and analyzed as well as concrete and precise result.

Study Area: Murshidabad district is situated beside the south of Ganga river and lies between 23°43' and 24°52' north latitude and 87°49' and 88"44' east longitude. It spreads over an area of 5.324 square kilometers and consists of a total population of 58. 64.569 person (Census 2001). Berhampore is the head quarter of the district. It comprises of 26 community development (CD) blocks. This district resembles an isosceles triangle with its apex pointing to the northwest. It is bounded by eastern frontier from the extreme north to south - eastern, by the Padma river or main channel of the Ganga which separates it from the district of Malda and Rajshahi. Burdwan and Nadia are situated in the southern part of the district and Birbhum and Jharkhand are on the western side of the study area. The main occupation of the district is agriculture. About 85 per cent population of the study area is directly or indirectly involved in agriculture.

Moderate type of climate is predominant in Murshidabad district. There is almost an entire absence of cloud and rainfall during the winter season (Nov. to Jan.) The lowest mean temperature has been recorded in Jan. (9.27°C) and the highest mean temperature observed in May (41°C). The highest average rainfall has been recorded in July (29.5 cm). The two chief drainages in this part of the district are the Bansloi in the north and the Dwarka in the south.

The total coverage area is 5324 sq. km. inhabiting 58.64.569 persons. 65% of workforce is engaged in agricultural activities and majority of farmers belongs to marginal and small size of holdings Livestock husbandry is developed as a household enterprise, producing mainly milk and also supplies live animals to meat industries in the district as well as in neighboring region. The area has 1250363heads-cattle. 103141 heads buffalo. 1414791 heads goats. 118290 heads sheep and 21894 heads pigs during 2003-04.Besides, poultry is also developed and about 5471013hens are in the district during same period.

Murshidabad District : Administrative Setup:



Result and Distribution:

The present era dairy offer good opportunities for nonfarm rural and urban employment. The perishable nature of milk, as well as wide range of product it can be witnessed a remunerable level of dairy rearing during 2006-2007.Data reveals that 1012091 heads of livestock are records at different scale of economic groups along with highly develop cropping system in Murshidabad district. All kind of bovine's cattle buffalo, goat and sheep are reared with cropping with various crops. The district Murshidabad exhibited a domination of cattle rearing followed by buffalos and goads. Cattle share 14 percent to total dairy reared in 2003-04. Buffalo ranked second 20.33 percent. Cattle also exhibited dominant position over other species even in term of number of dairy per unit hectare land as well per thousand populations due to traditional view point of Hindu religious.

Growth of Dairy Farming: Dairy rearing is an important segment of Indian agriculture. It is an integral part of rural economy .It is play a catalysis role of rural masses through milk and meat and assisting the agricultural operation in many ways (Ali.M 2009).During survey it was found that more than 70% household are engaged in dairy farming. They mainly raised livestock for two purposes, firstly for their won use and secondly for selling in to the rural markets to earn money. Now the nature of their livestock rearing pattern has transformed according to the economic viability as well market demand of different livestock (Khan 2009). The analysis of production of every species of livestock at individual basis exhibited contrasting features. Cattle in term of absolute number rose up continuously during 1993-94 to 2006-2007.The cattle to area and buffalo-population index also have showed positive growth from 1.76 and 212.75 in 1997 to 2.10 and 239.00 in 2007 respectively. The high positive growth of cattle occurred due to increasing demand of cattle beef at local level as well international level. They have high market value. They were reared mainly meat and milk. Their demand is high in meat industry as well as for their good quality milk.

Table 1: Growth of Dairy Farming :(1997-2007)

Year	Dairy Species in Percentage				
	Cattle	Buffalo	Goat	Sheep	Total
1997	58.44	20.33	19.56	1.95	100
2003	65.06	15.85	16.91	2.17	100
2007	67.8	13.59	17.72	0.90	100

Sources: District statsical Magazine 2007.

However goat is an important small ruminant and used for various proposes like milk and meat. They are usually reared at household level by poor people (small and marginal farmers) in the study area. It is emerged as a new option for enhancing the economic product of small and marginal farmers in rural areas of the district.

Table :2 Species wise distribution of Dairy in Murshidabad District:

Species	1993		1997		2007	
	Livestock/ 1000 population	Livestoc/ Hectare	Livestock 1000 population	Livestoc/ Hectare	Livestoc/ 1000 population	Livestock /Hectare
Cattle	212.75	1.67	220.04	1.80	239.20	2.10
Buffalo	150.15	0.85	90.43	0.43	58.63	0.78
Goat	75.62	0.62	57.20	0.46	180.57	0.70

District statiscal Magazine 2007.

Contrary to his the buffalo once very popular among the farmers, recorded a negative growth in this number as well as cattle land and cattle population indicates in the study (Table-2). Moreover the baffle rearing experienced a set beak due to mechanization of agriculture operation. They are mainly used in various agricultural operations as draught animals. Their number over the time declined from 100352 to 101619 heads 1993-94 to 100352 heads in 2007 recording negative growth rate. It is low capital intensive and can be feed on some grasses and straw crop grown. The demand for goad meat is also increasing day by day. It is widely acceptable in all ethnic group of Indian population unlike beef in country.

Employment generation through dairy farmer: Dairy farming system and related allied activities have appeared as new sources of employment. The making behaviours and trends of positive growth of demand of various kind of livestock encouraged the farmers for diversification one of the agriculture system in the form of dairy farming.(Khan et al 2006) 9 percent workforce of household surveyed in rural area is found to be involved direct and indirectly in livestock husbandry. Table-3 illustrates that large proportion of rural people are engaged in different operations of dairy farming as par time as well as full time workers. Most of them are found to be employed in various natures of activities like rearing, marketing, distribution and collection/ processing of dairy and their products.

Table 3: Different Modes of Employment Generation through dairy farming in Murshidabad Distruct: 2014-15

Blocks	Mode of Employment Generation				
	Rearing	Marketing	Distribution	Collection/ Processing	Total
Nabagram	21(70.00)	3(10.00)	4(13.33)	2(6.67)	30(100)
Khargram	23(76.67)	2(6.61)	3(10.00)	2(6.67)	30(100)
Domkal	20(66.60)	4(13.33)	5(16.67)	1(3.33)	30(100)
Raninagr I	19(63.33)	3(10.00)	5(16.67)	3(10.00)	30(100)
Sagardighi	22(73.33)	3(10.00)	3(10.00)	2(6.67)	30(100)
Total	105(70.00)	15(10.00)	20(13.33)	10(6.67)	150(100)

District statiscal Magazine 2007.

The study revealed that the rearing work employed largest propitiation 70 percent of dairy farmers in the study area. It varies between 15 percent and 20 percent among different categories of farmers. There is a quite variation among different blocks between 63.343 percent Raninagar 1 to 76.66 percent in Khragram. The marketing of dairy and their product are ranked at third position which share only 10 percent workforce as a whole. Their proportion varies between 6.67 percent Khargram to 13.33 Domkal. Tie last categories are the collection/ processing of dairy and their product employed merely 6.67 of total workforces which differ from 3.33 percent Domkal to 10 percent Sagardighi.

Table:4 Caste wise employment Structure of different sector animal husbandry in Study area.

Categories of farmers	Workers in dairy farmers to total workers	Operation of dairy Farmers			
		Rearing	Marketing	Collection/ processing	Total
High caste	30(20.00)	25(51.61)	10(23.57)	5(2.1)	42(100)
Other Backward Caste	90(60.00)	40(57.14)	20(28.57)	10(14.28)	70(100)
Schedule caste	30(2.00)	22(57.69)	2(31.05)	4(2.6)	38(100)
Total	150	87(58.66)	40(26.66)	23(15.33)	150(100)

District statiscal Magazine 2007.

The employment generation through dairy farming has been early controlled by the socio-economic composition of the society table-4 analysis the caste wise proportion and structure of the total workforce involved in different operation of livestock husbandry of the study area. Study shows that proportion of workforce involved in different operational of dairy farming showed different caste structure and social status. High level of employment of OBC group in dairy farming is mainly attributed to their traditional experience of animal rearing as well as the scarcity of land for fulltime envolment of all the family members for whole years.The work wise discussion also showed variation of social stratification. High caste showed the highest participation in rearing. They accounted for 59.61 of total person involved in dairy farming .The land for fodder is easily available to the high caste as they were usually having big size of land holding in the study area. After high caste the second big dairy rear because they were either employed as labour of high caste or they keep their own dairy for rearing.

In Marketing Sc were largest share holders (21%) because the marketing of livestock of high caste are done by the schedule caste as they serve as hired labour. It was followed by OBC (28.%) and high caste (23%) respectively. More ever collection/ processing activities are mostly done b OBC and share is 14.28 of the total workforce in OBC while least share is of the privilege group i.e high caste because they hardly do this job and it also differs from individual caste to caste among high caste.

Livelihood and Sustainability of Poor Farmers: Dairy farming integrated farming system, however, is well rooted in rural areas. Optimum utilization of animal products/ by products in the cultivation of various crops and the use of crops reduces and by products for rearing the animals have resulted in improvement of economic viability of agriculture and sustainability for poor farmers who follow the system.

The dairy workers and house hold utilize the earned income from various kind of dairy farming operation are found to utilize if in distinct socio-economic activities required by a household for its sustainable development in the study area. The most important attractive utilize of this income is house/ infrastructure development on an average in the study area. It is estimated 37.41 percent of total spent amount by dairy household. Constriction house purchasing of kitchen wares, electricity appliances, bicycles. byke etc demand are high amount. Cropping farming is the next important activity utilizes the income of dairy farming especially for purchasing inputs like seeds,fertilizers, insecticides, pesticides as well as payment for hired labours. It account for 25.58 percent .Social obligation as other special occasions spend only 11.16 percent and education receives like little attention and the farmers spend least share 5.66 percent of total amount utilized by them. The share for the categories varies from blocks to blocks as given from in

Table 5: Proportion of dairy farmer derived income utilized for various socio-economic activities in Murshidabad district W.B

BLOCK	Crop farming	Dairy farming	Education	House/In fracture	Social Function
Nabgram	40	19	2	30	9
Khargram	35	13	4	38	10
Domkal	26	30	5	31	8
Raninagral	21	16	3	45	15
Sagradigi	20	15	9	41	15
Total District	25.58	21.66	4.66	37.41	11.16

Data collectd through field survey 2014-2015.

The effect of economic stratification on the share of dairy farmer's income utilization for various function are also as served in the study area.

Table: 5 highlight the proportion of expenditure spent for different purposes by various group of farmers on the basis of their size of landholding. House hold and infrastructure expenditure is highly useful in the case of poor farmer's i.e landless, marginal, and small with less than 2 hectare of land. It is because that there is no other source of income to be meeting such kind of expenditure. Medium and big farmers spent rather large share of income on cropping and dairy farming in descending order. They spend on social function. Almost same as other farmers of small size of holding, education, however attract rather large share of income as compared to latter group are more aware education of children.

Table-6 Size of landholding wise proportion of dairy farmer derived income expenditure on various socio-economic activated in Murshidabad District W.B:

Category of farmers	Cropping	Dairy Farming	Education	House/ Infrastructure	Social Function	Other
Landless	2	36	5	43	10	4
Marginal (less than 1 hect)	10	33	3	39	12	3
Small (1-2 hect)	22	23	7	30	14	4
Medium (2-3hect)	25	25	10	26	12	3
Big (morethan hect)	30	21	11	21	15	2

Data collected through field survey 2014-2015.

Dairy workers perception about the benefit of dairy farming: The farmer's opinions about socio-economic impact assessment, some relevant question an asked regarding objectives of their occupation. Generation of income, employment of in living standards, sustainability of agriculture and formers, are the questions were asked to the respondents

Item	Total household answered for different	% of total reasoning of house hold
Extra Employment and income	1050	90
Help in Cropping	990	70
Improvement of living Standard	1000	80
Domestic fuel	1000	80
Infrastructure facilities	920	70
Education	550	50
Social Obligation	660	75
SustainabilityofAgriculture	690	78

Data collected through field survey 2014-2015.

Study reveals that 90 percent respondents viewed about increment of extra income and employment from dairy farming. It is also verified from the level of employment generated from profession. Living standard of the people improves as they because sends money on various family requirements through income generation by selling milk,calves as well as dung cakes. 80 percent opinion comes in its favor. Burden of cast of domestic fuel is also reduced through utilization of self indigenous produced like for cooking and other purposes. Sustainability of agriculture and performance of social obligation are well performed through use of income from dairy farming.

Conclusion:

Dairy farming is an important form of diversification of agriculture. The availability of marketing facilities at grass root level for dairy farming and allied products has encouraged the practice of dairy farming by the people of different socio-economic classes and strata. In the study area, the size of landholding is an important economic attribute which determine the level and proportion of rural dairy ranks located at gross root level. The participation of small and medium size of land holders is higher in dairy rear. Finding highlighted the influence the social stratification or caste on the proportion of workforce involved. The other backward classes have showed highest share of employment as compared to high caste and schedule caste. Dairy farming provides employment to different socio-economic group of the study area. The most of the beneficiary belong to poor farmers and socially deprived classes. Large share of their income utilize in cropping and dairy farming combined more than 50 percent on an average which helps the farmers for purchasing inputs where they need invest in agriculture.

The poor dairy farmers as well as workers become able to their living standard through the utilization of their income generated from dairy sector in improving house and infrastructure condition and fulfilling their social obligations satisfactory escaping from clutches of money lenders. 20-40 percent of their income utilized for the same purposes with variation with size of land holding and social stratification. Education conscience also seems to be improve as 3-12 percent income spent on it such kind of development indicates the improvement in income viability of the farmers especially land less, marginal and small. Dung cake, formed cow and buffalo dung, use for cooking food as fuel which also reduces the burden of purchasing wood, LPG and Keresene oil. An integrated dairy- cropping farming system has emerged in the area. It is most suitable farming system with high level of environment suitability, social acceptability and economic viability of poor farmers.

REFERENCES:

1. **Allana, I**.(2005*) Current Scenario and Growth Prospects Meat and Rising India's Global Markets*, Presented at the Agriculture Summit, vigyan Bhavan, New Delhi,
2. **Brithal,P.S and Taneza, V.K**(2006), *Livestock Sector in India Opportunities and Challenges* Presented at the ICAR-ILRI Workshop on Small Holder Livestock Production in India held during January 24-25 at NCAP, New Delhi.
3. **Delago C. et al.** (1999) *Livestock to 2020-The new Food revolution. Food, Agriculture and Environmen*t, discussion paper 28.International Food Policy Research Institute (IFPRI).FAO, ILRi, pp .83
4. ***Khan et al**, (2008.)Livestock revolution-in monsoon Asia during post economic reform period ,* Asian Profile,36(5*).*
5. **Khan, N. and Iqubal, M.A.** (2008) *Livestock Husbandry and Its Impact on Employment Generation in Aligarh District*, African Journal of Livestock Extension, Vol. 6, No.2, pp.20-24.
6. **Khan, N., et al.** (2010) Livestock Husbandry in India : A Blessing for Poor, *Proceeding of International Seminar on Tropical Livestock Production, 5th ISTAP*, Yogyakarta, Indonesia, Oct. 19-22, 2010.
7. ***Rama Rao, W.Y**(2005.), Crop Livestock integrated farming system for augmenting socio-economic status of small holder tribal farmers of Chattisgarh* in central India, Livestock Research for rural Development, Vol. 17(8), pp.1-3,
8. ***R*ollef son, K.I.** (2001) Livestock *Development for Food Security*, Annual Report of the League for Pastoral Peoples, 2000/2001.9. **Steinfeld H and Gerber P.** (2010) *Livestock production and the global environment: Consume less or produce better?* Proceedings of National Academy of Sciences USA. 26; 107(43):18237-8.